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ABSTRACT

Intended for classroom teachers, the manual provides an approach to observation, assessment, record keeping, and remediation of students' visual performance. A list of clues for detecting visual performance difficulties and nine laws applicable to visual performance development tasks are given. Described in two sections are the materials, steps, and activities involved in the evaluation of motor visual functioning (fixation, tracking, and convergence) and perceptual visual functioning (using a form strip activity, chalkboard activities, and flat form tasks). Blank record sheets are also provided. In a final section are guidelines for a form strip and cutouts, charts for 11 flat form tasks, an outline of developmental age norms and stages of visual perception, a glossary of terms, and a list of sources for commercial materials. (SB)

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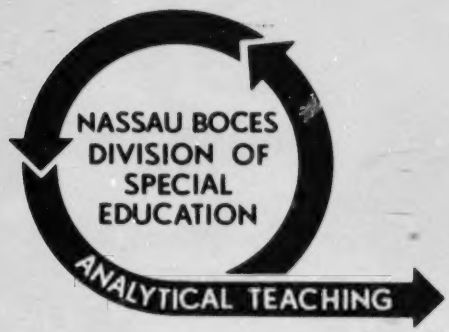

VISUAL PERFORMANCE MANUAL

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Rosalind B. Chaikin
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Helen Spiewak

FOREWORD

In the first weeks of school an observant teacher becomes aware of students' aberrant learning behavior. In attending to the details of those tasks which present problems, she or he may assess that the difficulty involves visual performance.

Efficient ocular control is a necessary component to reliable visual processing. The child who looks away, tilts his head, possibly occluding one eye, who becomes uninterested or disruptive when a visual task is presented, may lack eye accommodation skills and need special training in ocular control. It is apparent that the visual process develops in a sequential pattern; however, stimulation and training are clearly needed if maximum efficiency is to be achieved.

Of special interest are the following quotes taken from Natalie Barraga's excellent review of the research and literature on visual behavior in children entitled Increased Visual Behavior in Low Vision Children (1964).

> "An interesting thesis was submitted by Renshaw (1945), who suggested that as repeated visual stimuli are experienced and skill in discrimination increases, the retinal image increases in size and in sharpness; the sensory aspects of vision then tend to become subordinate to the motor functioning so that an integration of sensory and motor activities fulfill the act of visual discrimination."
>
> "Sells and Fixott (1957) felt that the improvement of visual functioning was accomplished through either orthoptic training or perceptual training, but acknowledged that, in some cases, both types of training might be necessary to effect the desired change in visual performance."
>
> "Exposing figures for differentiation, matching, and recognition, Freeman (1929) concluded that repetition and rapidity of exposure increased recognition ability, and that if a given configuration were similar to one previously recognized, the response was easier and faster."
>
> "The literature was shown to suggest the ongoing development of the visual process through maturation, and in spite of anomalies of the eye which may hamper the development of visual processes, training and experience appear to act as ameliorating forces in the improvement of visual efficiency. Gesell (1959) and Hildreth (1947) stated that the sharpness of vision had no one true value, but was as variable as individuals themselves, and that in children with low degrees of vision, functional behavior was a matter of learning."

R. C. Orem in Learning to See and Seeing to Learn (1971) brings us up to date with the "team approach" concept for helping children to learn. He states "today's able and dedicated teacher realizes how her observation of a child in the classroom can spell the difference between his academic success or failure."

Getman, in the same book, adds "the early identification of any interfering visual problem can be the difference between success or failure for both the child and the teacher in the total educational process."

Classroom tasks demand a high level of visual performance. They range from block building and bead stringing, matching objects, forms, colors or letters, to completing puzzles, copying, reading or writing. Subtle, demanding skills are required. Any or all of these may be beyond the visual ability of some children. Simple, well-directed classroom activities may be used as training exercises to help such students achieve the ocular perception necessary to perform these tasks.

This Visual Performance Manual provides an approach to observation, assessment, record keeping, and remediation of visual performance on a developmental basis.

When the teacher observes a child's inefficient visual performance in classroom activities, she is directed to the Visual Performance Manual.

Section I, when administered, will give the teacher direct input as to how the child uses his eyes for the essential functions: fixation, tracking and convergence.

Section II is arranged so that the teacher may start with any subtest judged appropriate and move to either a higher or lower level, depending upon the student's response.

In this way the child's level of functioning is established, and related educational intervention can be planned.

Rosalind B. Chaikin
Bertha Hartman
Helen Spiewak

May 1974

OBSERVABLE CLUES

Many visual problems are not revealed by the Snellen chart. An alert and informed teacher will observe many behaviors that are reliable clues to difficulties related to the visual performance expected in the classroom. A checklist of observable clues that indicate possible visual problems follows:

( ) Unusual fatigue or restlessness after maintaining visual concentration

( ) Complains of letters or lines "running together" or "jumping around"

( ) Complains of blur while reading or writing

( ) Nausea or dizziness

( ) Blinks excessively only at reading and desk tasks

( ) Frowns, scowls, or squints

( ) Holds book closer than normal

( ) Moves head while reading or during any visual scanning in the classroom

( ) Covers or closes one eye

( ) Avoids close work

( ) Has short attention span in reading or copying

( ) Tilts head to one side

( ) Rubs eyes frequently

( ) Rests head on his arm when writing

( ) Assumes improper or awkward posture while reading or writing

( ) Thrusts head forward or backward while looking at distant objects

( ) Turns one eye in or out at anytime; cannot converge

( ) Excessive tearing of the eyes, frequent styes, reddened eyes or lids

( ) Headaches in forehead or temples

( ) Slowness in all schoolwork; unusual awkwardness

( ) Complains of seeing double

( ) Repeatedly omits "small" words

( ) Slowness in copying from the chalkboard; or errors in copying from reference books to notebook

( ) Large pupils in normal light

( ) Excessive squinting from bright light

( ) Poor eye-hand coordination

( ) Writes crookedly; work is poorly spaced

( ) Uses finger or marker to guide eyes

( ) Skips words or sentences

( ) Rereads lines or phrases

( ) Repeated confusion of similar words

( ) Says words aloud or moves lips; reads too slowly

( ) Misaligns both horizontal and vertical series of numbers

( ) Repeatedly confuses right-left directions

( ) Fails to recognize same word in next sentence or different book

( ) Comprehension poorer as reading continues, or loses interest quickly; poor ability to remember what is read

LAWS OF LEARNING

From Learning to See and Seeing to Learn, by R. C. Orem (pages 269-271), we have at our disposal a series of accepted laws of learning related to visual performance. Over many years, in carefully controlled research laboratories, verified and reliable information relative to motor learning has been accumulated. From this storehouse of information some important laws have evolved. These reinforce the important teaching principles that (1) behavior cannot be acquired until a response is made; (2) nothing is learned without exercise.

This information is then directly applicable to teacher use in designing tasks that can help develop visual performance.

Consider the laws:

1. We learn by reacting.
2. Learning takes place only during activity.
3. Exercise or training of any reaction strengthens it.
4. Use and/or exercise of any situation--response increases the connection.
5. The greater the frequency of exercise, the stronger the connection. Exercise is cumulative in effect.
6. Disuse decreases the strength of a connection.
7. The more recent the exercise, the stronger the connection.
8. New connections may be made and reinforced by the simultaneous use of two or more stimuli.
9. Law of effect: "Individuals tend to repeat those reactions that are satisfying, whereas they tend to avoid those reactions that are annoying."

SECTION I

VISUAL FUNCTIONING: MOTOR

ASSESSMENT

FIXATION

TRACKING

CONVERGENCE

RECORD SHEET

SUGGESTED ACTIVITIES

FIXATION

MATERIALS: A container with five objects (examples: a hand-sized ball, a small toy car, a colored block, a crayon, a cup).

DIRECTIONS:

1. The teacher faces the child and says, "Keep your head still and move only your eyes." Whenever necessary, remind the child not to move his head. If the child cannot do this, hold his chin gently. Allow two trials.

   If a child cannot fixate with both eyes, occlude one eye at a time and test ability with each eye (monocular visual performance).

2. The teacher holds an object within reach of the child and says, "Look at this. What is it? Take it and put it on the table."

   Hold the object:

   a. midline at eye level
   b. left at eye level
   c. right at eye level
   d. three inches above eye level
   e. three inches below eye level

EVALUATION: Record the child's performance for each task.

1. Did the child fixate?
2. Did the child tilt his head, possibly occluding one eye?
3. Did the child hold his head still?
4. Did the child need help to hold his head still?
5. Did the child overreach or underreach the object?
6. Did the child name each object?

TRACKING

MATERIALS: A pencil with a colored thumbtack through the eraser.

If the target is not effective choose one of the following:

a. a magic marker with brightly colored cover
b. a flashlight pen
c. a large red lollipop

DIRECTIONS:

1. The teacher faces the child and says, "Keep your head still and move only your eyes." Remind the child whenever necessary not to move his head. If the child cannot do this, hold his chin gently. Allow two trials.

   If the child cannot track with both eyes, occlude one eye at a time and test his ability with the right eye, then the left eye.

2. Hold the target approximately 18 inches to 20 inches from the child's eyes and move it:

   a. left across midline to right
   b. right across midline to left
   c. midline up and down
   d. midline down and up
   e. diagonal upper left to lower right
   f. diagonal upper right to lower left
   g. diagonal lower left to upper right
   h. diagonal lower right to upper left

3. For tasks the child cannot perform, start at midline to determine extent of ability in any direction.

EVALUATION: Record the child's performance for each task.

1. Did the child follow the target?

2. Did the child move his head?

3. Did the child hesitate or have difficulty crossing the midline?

4. Were the child's eye movements smooth?

5. Were the child's eye movements well-coordinated?

CONVERGENCE

MATERIALS: One colored square, one differently colored circle, and one 4" cardboard circle.

DIRECTIONS:

1. The teacher faces the child holding the square at eye level about 18 inches from the child and says, "Watch this square. Keep your head still."

   The teacher moves the square forward gradually to about four inches from the child.

2. The teacher holds both the circle and the square at the child's eye level, one in front of the other, the square in the right hand about 18 inches from the child, the circle in the left hand about four inches from the child.

   The teacher says, "Look at the circle; look at the square."

   Repeat three times.

3. The teacher places a 4" colored circle on the chalkboard and sits 10 feet in front of the board and three feet from the child.

   The teacher says, "Keep your head still and move only your eyes. Look at the circle; look at my nose."

   Repeat three times.

EVALUATION: Record the child's performance for each task.

1. Did the child fixate both eyes on the object?
2. Did the child's eyes accommodate as the object moved closer?
3. Did the child fixate on the far object and then on the near object each time?
4. Were his eye movements smooth?

SECTION I--RECORD SHEET

NAME _____ TEACHER _____

AGE _____ DATE _____

CAN DO +
CANNOT DO --

	Both eyes	L	R	Comments related to evaluation questions on assessment pages 3, 4, and 5
FIXATION				
1. Eye level midline				
2. Eye level left				
3. Eye level right				
4. Three inches above eye level				
5. Three inches below eye level				
TRACKING				
Midline				
1. Left across midline to right				
2. Right across midline to left				
3. Midline up				
4. Midline down				
Diagonal				
5. a. Upper left to lower right				
b. Upper right to lower left				
c. Lower left to upper right				
d. Lower right to upper left				
CONVERGENCE				
1. Fixate far				
2. Fixate near				
3. Accommodate from near to far				
4. Accommodate from far to near				
5. Movements smooth				

SUGGESTED ACTIVITIES

RULES TO APPLY

In order to provide teachers with a basis for designing remediation tasks, the authors present several rules. These may be adapted to suit the visual functioning level, the learning style, and other individual needs of the child. Thus Rule 3 should be considered for children who need a multisensory approach. In any given task, rules may be used singly or in combination.

1. Reduce the field of vision.

2. Enlarge the stimulus.

3. Integrate visual with other sensory input, i.e., visual motor, visual vocal, visual auditory.

FIXATION--EXAMPLE A

MATERIALS: A box containing small objects (a pencil, chalk, colored inch cubes, form blocks, small toys, a spoon, a fork, etc.)

DIRECTIONS: The teacher sits with the box of objects in her lap, facing the child. The teacher says, "Keep your head still; move only your eyes." The teacher takes an object out of the box with her right hand and holds it out to her right at eye level. The teacher asks the child to look at the object and name it. The teacher takes an object out of the box with her left hand and holds it out to her left at eye level. The teacher asks the child to look at and name the object. The teacher continues to alternate right and left hands and hold objects as follows:

a. midline at eye level
b. to the right at eye level
c. to the left at eye level
d. midline above eye level
e. midline below eye level
f. diagonal positions, one at a time

If the child moves his head the teacher says, "Sit with the back of your head against the wall." (This will help the child feel when his head moves and promote better control.)

RULE 1. REDUCE THE FIELD OF VISION

If the child has great difficulty with the task, the teacher holds objects close to center to insure success: not too far to the right nor the left, not too high nor low, not too wide on diagonals. The teacher widens the distance as the child improves.

RULE 2. ENLARGE THE STIMULUS

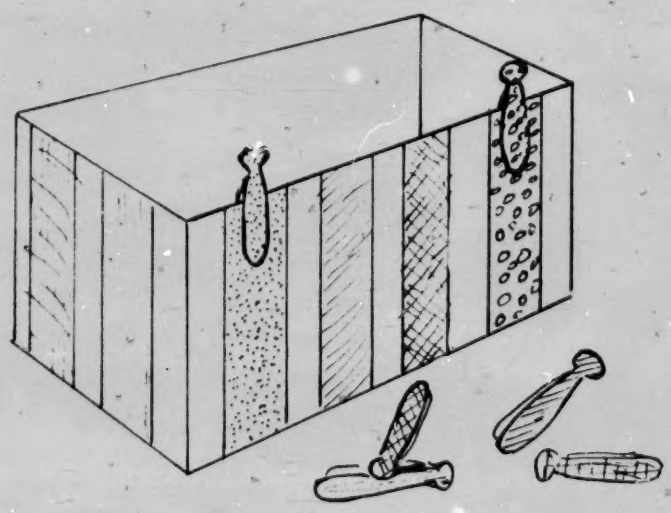
Some children need large, colorful, motivating targets in order to attend to the task. Examples: Flashlight, fruit (orange, apple, etc.), bell, paper flower.

RULE 3. INTEGRATE VISUAL WITH OTHER SENSORY INPUT

a. The teacher asks the child to look at the object, then take it (visual motor).
b. The teacher asks the child to look at the object, then name it (visual vocal).
c. The teacher asks the child to hold the object, look at it, and name it (kinesthetic, visual, vocal).

FIXATION--EXAMPLE B

MATERIALS: A box, as shown, with colored stripes and matching clothespins.



DIRECTIONS: The teacher directs the child to place clothespins on the box, matching the colors if he can.

RULE 1. REDUCE THE FIELD OF VISION

If the child has great difficulty with the task, the teacher may use a box with only two stripes. The teacher sits facing the child and points to one stripe. The teacher says, "Look at this." When the child centers on the stripe, the teacher asks him to place the matching clothespin on the box.

The teacher points to the second stripe and repeats the direction. If the child has difficulty manipulating the clothespin, the teacher observes the eye movements and helps the child to place the clothespin. As the child improves, more stripes are introduced.

RULE 2. ENLARGE THE STIMULUS

The teacher introduces a box with one and one-half inch colored stripes clearly outlined in black. As the child improves his focus, the teacher reduces the width of the stripes, then removes the black outline until only a sharp line is needed.

RULE 3. INTEGRATE VISUAL WITH OTHER SENSORY INPUT

a. The teacher points to the stripe and says, "Look here; put your finger here" (visual motor).
b. The teacher directs the child to place clothespins on stripes (visual motor).
c. The teacher points to the stripe and asks, "What color is this?" (visual vocal).

ADDITIONAL ACTIVITIES

FIXATION

1. MATERIALS: A set of cards with arrows, as shown.

DIRECTIONS: The teacher holds up one card at a time and says, "Look at this card. Use your hand to show me how this arrow goes."

2. MATERIALS: A chalkboard with squares drawn so that the number 5 square is at the child's eye level (see below).

1	2	3
4	5	6
7	8	9

Squares may be marked with numbers or letters, or the teacher may point to the box.

DIRECTIONS: The child stands comfortably at the board. The teacher reminds the child to keep his head still. The teacher says, "Look at box number 5 and mark it. Look at box number 1 and mark it." The teacher continues until all boxes are marked.

3. STRING PAPER CLIPS

4. STRING BEADS

5. PEG BOARD ACTIVITIES

6. PASTING ACTIVITIES

SUGGESTED ACTIVITIES

TRACKING--EXAMPLE A

MATERIALS: A table, two yardsticks, and a ball.

DIRECTIONS: Place the table against the wall. Set the yardsticks about 12 inches apart to form a road. The child stands midway down the road alongside the table. The teacher rolls the ball down the road and says, "Watch the ball go down the road without moving your head."

RULE 1. REDUCE THE FIELD OF VISION

Blocks are used instead of yardsticks so that the road is more restricted visually. The road is 18 inches long, or less, depending on the child's level of functioning. The teacher rolls the ball and asks the child to track.

RULE 2. ENLARGE THE STIMULUS

Chairs or boxes are used to make a road 24 inches wide. The teacher rolls a large ball or toy truck along the road and asks the child to track.

RULE 3. INTEGRATE VISUAL WITH OTHER SENSORY INPUT

a. The child rolls the ball and tracks (visual motor).
b. The teacher rolls the ball. The child tracks the ball and says, "Here comes the ball" (visual vocal).
c. The teacher rolls the ball and says, "Look at the ball. Do you see the ball? Keep your eyes on the ball" (visual auditory).

TRACKING--EXAMPLE B

MATERIALS: Two pen flashlights and a chalkboard.

DIRECTIONS: The teacher and the child face the chalkboard. The teacher flashes light on the chalkboard. The child catches the light with his own flashlight without moving his head. Play a game of "catch-my-light," moving from left to right, in diagonals, in a circle, square, triangle, etc.

In "trace with flashlight," the teacher and the child trace various forms that have been predrawn on the chalkboard. This activity can be an effective tool in learning letter and number forms.

RULE 1. REDUCE THE FIELD OF VISION

If the child has great difficulty with the task, simplify it in several ways. Use one flashlight. The teacher flashes the light. The child tracks with his eyes or stands at the board and follows the light with his finger. The teacher moves the light short distances, increasing the field as the child improves.

RULE 2. ENLARGE THE STIMULUS

Use a large hand flashlight.

RULE 3. INTEGRATE VISUAL WITH OTHER SENSORY INPUT

a. Original task contains this component (visual motor).
b. As the child catches the teacher's light he says, "There's the light. I caught it" (visual-motor-vocal).
c. The teacher moves the light and says, "Keep your eyes on the light. Catch it now" (visual-motor-auditory).

ADDITIONAL ACTIVITIES

TRACKING

1. Two children sit opposite each other with their legs apart. They roll a ball one to the other watching (tracking) the ball to be sure it is rolling between the legs of the child opposite.

2. Bowling--set up an alley using pins or empty milk containers. Have the child knock the pins down with the rolling ball. At first the alley may need to be set up with a wall of chairs on either side. This can be phased out to colored paper lines and then to taped lines that indicate the boundaries of the alley.

3. Have the child throw a ball or bean bag up, track it as it goes up, and catch it. For greater proficiency have the child throw the ball up, clap hands, and then catch it.

4. Use a hand-size ball (like a tennis ball). Have the child bounce the ball once and catch it. He must track the ball carefully with his eyes in order to accomplish this. Caution him to keep his eyes on the ball. Start with one bounce. When he is competent at this, increase to two bounces, then three. The goal is to catch the ball with one hand in regular downward grasp fashion.

5. Track with objects by drawing paths on the chalkboard. The child stands in the center and uses a small car along these paths. Eye and hand work together in a closer relationship than with the flashlight. Also aim for less and less head movement and more and more eye movement. This helps to develop peripheral vision.

6. Follow a moving object. The child must sit with his head still. The teacher moves the object from left to right, up and down, and in diagonals for the child's eyes to follow.

7. For older children:

   a. croquet
   b. jacks
   c. marbles
   d. yo-yo
   e. any small, commercial hand game which requires that the child track a small object as he manipulates the toy. Examples of these are: tic-tac-toe, concentric maze, pinball type games, etc.

8. Visual Distance Tracking--Wall Baseball

   Put large, colored circles on one clear wall of the room.

red	blue	yellow
black	green	pink
white	orange	brown

   The children stand at the other end of the room. They are instructed to look at the color named without moving their heads. After some practice (i.e., as soon as they know where the colors are) the game starts. If the child's eyes miss the target or skip it, he has a strike against him. Three strikes puts him out. Completing the routine is a home run. The teacher must be the umpire, watch the children's eye movements, and call the shots.

   Practice the routine. The teacher calls the colors in this order: red, blue, yellow, black, green, pink, white, orange, brown. If any difficulty is noted, the teacher touches each color with a pointer as it is called. If the difficulty persists, the teacher has the child point with outstretched arm and forefinger.

   Baseball game

   Red, yellow, white, brown (two times).
   Red, yellow, black, pink, white, brown (two times).
   Red, blue, black, green, white, orange (two times).
   Blue, yellow, orange, brown (two times).
   Blue, yellow, green, pink, orange, brown (two times).

   Later on circles can all be of one color, numbered differently.

SUGGESTED ACTIVITIES

CONVERGENCE

DIRECTIONS: The child sits at his desk. The teacher places a book on the desk and sits facing the child four feet away. The teacher says, "Look at your book, look at my eyes; book, eyes."

The teacher repeats, "Book, eyes" five or six times, waiting about three seconds between words.

RULE 1. REDUCE THE FIELD OF VISION

The teacher sits two feet from the child and moves further back as the child succeeds.

RULE 2. ENLARGE THE STIMULUS

The teacher asks the child to look at the board, then the desk. When the child is ready, the teacher uses large colorful discs on the board and gradually reduces the size of the forms.

RULE 3. INTEGRATE VISUAL WITH OTHER SENSORY INPUT

a. The teacher sits four feet from the child holding five large objects in her lap (examples: a book, a board eraser, paper, a large block, scissors). The child sits with duplicate items on his desk. The teacher holds up one object and says, "What am I holding?" After the child names the object the teacher says, "Look at the one on your desk." The teacher continues until all items are named, gradually reducing the size of the objects as the child succeeds (visual-vocal).

b. The teacher sits four feet from the child holding five objects. The child sits with duplicate items on his desk. The teacher holds up a book and says, "Look at this. Pick up the one like it on your desk." The teacher continues until all items are chosen, using smaller objects as the child succeeds (visual-motor).

ADDITIONAL ACTIVITIES

CONVERGENCE

1. The teacher asks the child to hold one thumb up at eye level about ten inches away. The teacher says, "Look at your thumb, look at the board." The teacher repeats directions three to five times at first, working up to ten times.

2. The teacher makes a horizontal line on the table and asks the child to blow a ping pong ball across the line. (First he blows, then he looks ahead to see his goal, then he blows again, etc.)

3. The teacher provides a kit for blowing bubbles. The teacher holds the wand near the child and asks the child to look at the wand as he blows a bubble. Once the bubble leaves the wand, the teacher asks the child to follow it with his eyes.

SECTION II

VISUAL FUNCTIONING: PERCEPTUAL

ASSESSMENT

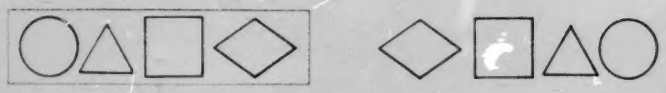
- FORM STRIP ACTIVITY
- CHALKBOARD ACTIVITIES
- FLAT FORM TASKS

RECORD SHEET

SUGGESTED ACTIVITIES

FORM STRIP ACTIVITY

HORIZONTAL



MATERIALS:

1. Oaktag strip with four geometric forms as shown. (See page 47.)
2. Oaktag cutouts of shapes represented.

DIRECTIONS:

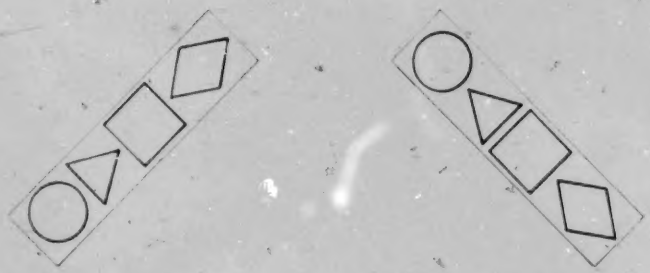
1. The child is seated beside the teacher. The teacher presents shapes one at a time and tells the child to look at and point to the same shape on the oaktag strip. Allow two trials.
2. If the child demonstrates success, the teacher tells the child to place the shape on the strip.

VERTICAL

MATERIALS: Same as above.

Turn the oaktag strip in vertical position as shown above. Follow directions as above.

DIAGONALS



MATERIALS: Same as above.

Place the oaktag strip in diagonal positions as shown above. Follow directions as above.

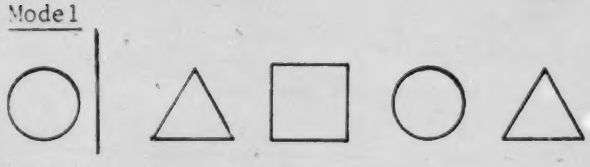
EVALUATION: Record the child's performance for each task.

1. Did the child look at the shape? (Fixation.)
2. Did the child look at the strip? (Convergence.)
3. Did the child scan the strip? (Tracking.)
4. Did the child match shapes? (Perception.)
5. Did he place shapes correctly without trial and error? (Fixation, tracking, convergence, fine motor.)

CHALKBOARD ACTIVITY 1

HORIZONTAL A.

Model



MATERIALS: Chalkboard and chalk.

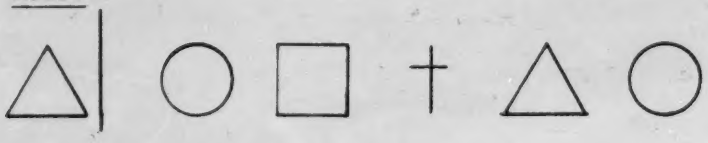
DIRECTIONS: The teacher draws forms, as seen above, on the chalkboard at a level that is comfortable for the child's height. The child stands in front of the board.

The teacher points to the model and says, "See this? Point to one just like it."

If the child fixates on the model, but does not scan the row, the teacher runs her index finger under the row of forms to direct the child for success.

HORIZONTAL B.

Model

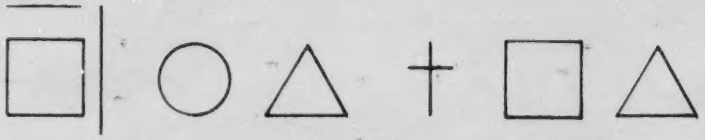


MATERIALS: Same as above.

DIRECTIONS: Same as above.

HORIZONTAL C.

Model



MATERIALS: Same as above.

DIRECTIONS: Same as above.

VERTICAL

Model

MATERIALS: Same as above.

DIRECTIONS: Same as above.

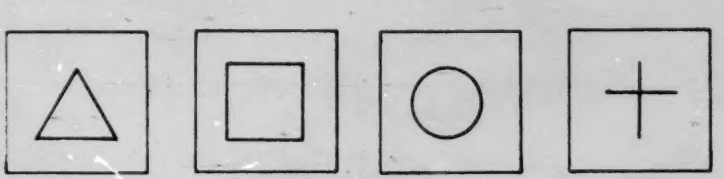
EVALUATION: Record the child's performance for each task.

1. Did the child fixate on the model?
2. Did the child scan appropriately? Did he need direction?
3. Did the child match shapes without trial and error?

CHALKBOARD ACTIVITY 2

MATERIALS: Chalkboard, chalk, desk, 4" x 4" previously prepared cards. (See page 47.)

DIRECTIONS: The child sits at a desk or table approximately six feet from the chalkboard. In front of the student on the desk are four cards (4" x 4") arranged in this order.



1. The teacher draws on the board and says, "See this? Show me one just like this on your desk?"
2. The teacher draws and repeats directions as in 1 above.
3. The teacher draws and repeats directions as in 1 above.
4. The teacher draws and repeats directions as in 1 above.

After each response make sure cards are lined up on the desk as shown above.

EVALUATION: Record the child's performance for each task.

1. Did the child change focus from the chalkboard to the desk? (Convergence.)
2. Did the child scan the cards at the desk? (Tracking.)
3. Did the child match the forms without trial and error?
4. Did the child change focus from the desk to the chalkboard? (Convergence.)
5. Other comments.

FLAT FORM TASK 1

MATERIALS: One ditto sheet with material evenly spaced to fill the page. (See Appendix, page 49.) Pencil or crayon.

Model

1.	c	m	a	f	c		
2.	d	l	s	d	r		
3.	5	1	7	5	2		
4.	2	6	3	4	2	9	
5.	h	a	n	l	r	h	

DIRECTIONS:

1. The child sits beside the teacher who points to model line 1 and says, "See this? Show me one just like this one."

   If the child does not scan the row, the teacher runs her index finger under the row of letters to direct the child. If the child points to the correct letter, the teacher says, "Mark it with your pencil (or crayon)."

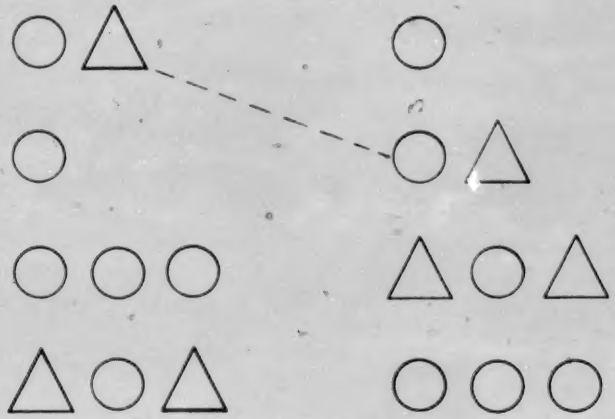
2. The teacher points to model lines 2 through 5 in order, repeats directions in 1 above for each line.

EVALUATION: Record the child's performance for each task.

1. Did the child fixate on the model?
2. Did the child scan across the row? Did he need direction?
3. Did the child match the letters or numbers without trial and error?
4. Did the child mark the letter or number without trial and error?
5. Other comments.

FLAT FORM TASK 2

MATERIALS: One ditto sheet with material evenly spaced to fill the page. (See Appendix, page 50.) Pencil or crayon.



DIRECTIONS:

1. The child sits beside the teacher who points to the top left geometric forms ○△ with left index finger and runs right index finger down right column.

   The teacher says, "See this set? Show me a set just like this. Draw a line connecting them."

   The teacher directs the child for success in the first attempt.

2. The teacher repeats the directions asking the child to match succeeding forms.

EVALUATION: Record the child's performance for each task.

1. Did the child fixate on initial stimulus?
2. Did the child match without trial and error?
3. Did the child connect geometric forms without trial and error?
4. Other comments.

FLAT FORM TASK 3

MATERIALS: One ditto sheet with material evenly spaced to fill the page. (See Appendix, page 51.) Pencil or crayon.

DIRECTIONS:

1. The child sits beside the teacher who points to the top left word (in) with left index finger and runs right index finger down right column.

   The teacher says, "See this word? Show me a word just like this. Draw a line connecting them."

   The teacher directs the child for success in the first attempt.

2. The teacher repeats the directions asking the child to match succeeding words.

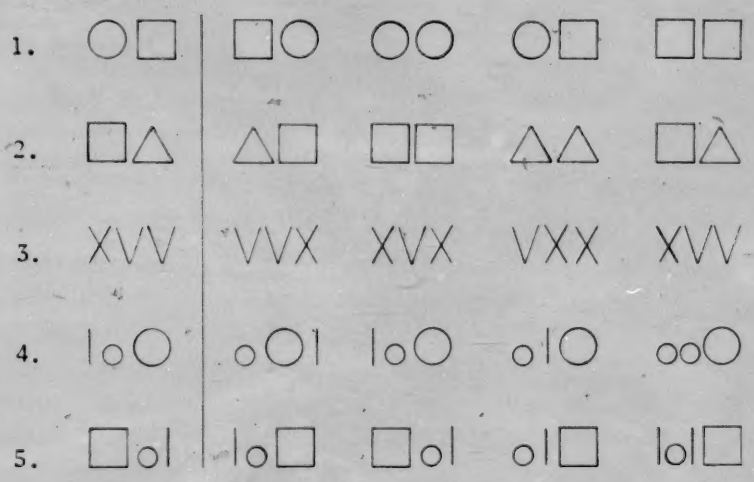
EVALUATION: Record the child's performance for each task.

1. Did the child fixate on initial stimulus?
2. Did the child match without trial and error?
3. Did the child connect words without trial and error?
4. Other comments.

FLAT FORM TASK 4

MATERIALS: One ditto sheet with material evenly spaced to fill the page. (See Appendix, page 52.) Pencil or crayon.

Model



DIRECTIONS: The child sits beside the teacher who points to model 1 and says, "See this set? Show me a set just like this one."

If the child does not scan the row, the teacher should run her index finger across and under the row to direct him. If the child points to the correct group, the teacher says, "Mark it with your pencil" (or crayon).

The teacher points to model lines 2 through 5 in order and repeats the directions above, for each line.

EVALUATION: Record the child's performance for each task.

1. Did the child fixate on the model?
2. Did the child scan across the row? Did he need direction?
3. Did the child match sets without trial and error? Did he check form by form sequentially?
4. Did the child mark the set without trial and error?
5. Other comments.

FLAT FORM TASK 5

MATERIALS: One ditto sheet with material evenly spaced to fill the page. (See Appendix, page 53.) Pencil or crayon.

Model

1.	sit	set	tis	sat	sit
2.	must	much	most	must	mast
3.	next	text	next	nets	nest
4.	every	even	ever	everey	every
5.	girls	grils	girds	girls	sgrit
6.	25	52	35	53	25
7.	794	947	794	497	974

DIRECTIONS: The child sits beside the teacher who points to model 1 and says, "See this? Show me a word just like this one. Mark it with your pencil" (or crayon).

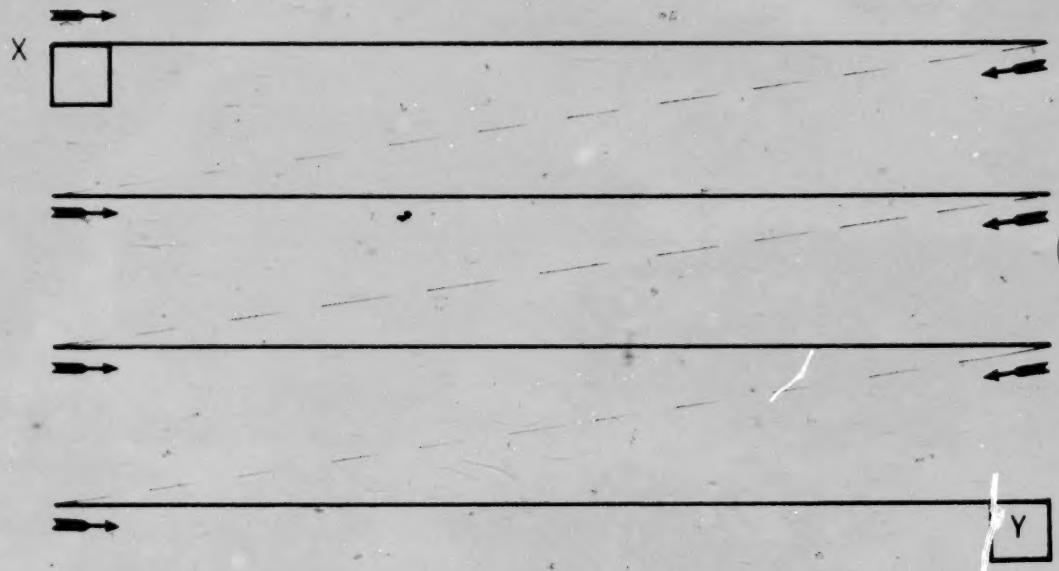
The teacher repeats the direction each time, if needed.

EVALUATION: Record the child's performance for each task.

1. Did the child fixate on the model?
2. Did the child scan the row? Did he need direction?
3. Did the child match words? Numbers? Did he check his work?
4. Did the child mark the word (number) without trial and error?
5. Other comments.

FLAT FORM TASK 6

MATERIALS: One sheet with black lines (spaced appropriately) for visual tracking. (See Appendix, page 54.)



DIRECTIONS:

1. The teacher says, "Make your finger trace the line." The teacher demonstrates one time starting at box X and continuing to Y.

EVALUATION: Record the child's performance.

1. Did the child trace the line left to right?
2. Did the child go to the beginning of the new line correctly?
3. Did the child track the line with his eyes?
4. Did the child have difficulty crossing the midline?
5. Did the child track smoothly throughout the task?
6. Did the child lose his place and need to stop once, twice, frequently?
7. Other comments.

FLAT FORM TASK 7

MATERIALS: One sheet with geometric forms evenly spaced. (See Appendix, page 55.)

□○△

1. □○△△□□○○□△○□□△

2. △○△△○□○○□△○△○△

3. □○△△○□○○□△○△○△

DIRECTIONS:

1. The child sits beside the teacher who points to the □ in the model and then to the row and says, "See this square (box). Show me all the squares (or boxes) in this row."

   If the child can use pencil or crayon say, "Mark all the squares in this row."

2. The teacher points to the circle in the model and then to line 2 and repeats the directions.

3. The teacher points to the triangle in the model and then to line 3 and repeats the directions.

EVALUATION: Record the child's performance in each task.

1. Did the child track from left to right across the row?

2. Did the child identify the form correctly and easily?

3. Did the child start at the left and move smoothly to the right?

4. Did the child cross the midline or skip the middle section?

5. Other comments.

FLAT FORM TASK 8

MATERIALS: One sheet with letters spaced clearly and evenly across a row. (See Appendix, page 56.)

a f v e 4 2

1. g a h c a a b q a d e i a v a k e m a o o

2. n b f t l o a a o f r q w f p f f n o t v w f

3. v r p v w u v c a p v y z p v w u m v v v

4. K i n e r p f e c e o r e e u n x e t z o l

5. 7 9 4 3 2 4 1 4 4 0 5 6 4 8 6 3 4 1 4 4 3 2

6. 2 0 3 2 4 6 2 5 7 2 9 1 8 2 1 2 3 4 2 9 6

DIRECTIONS:

1. The child sits beside the teacher who points first to "a" in the model and then to line 1 and says, "See this 'a'? Show me all the 'a's' in this row."

   If the child can use a pencil or crayon say, "Mark all the 'a's' in this row."

2. The teacher points to "f' in the model, then to line 2 and repeats the directions above.

3. The teacher points to "v" in the model, then to line 3 and repeats the directions in 1.

4. The teacher points to "e" in the model, then to line 4 and repeats the directions in 1.

5. The teacher points to "4" in the model, then to line 5 and repeats the directions in 1.

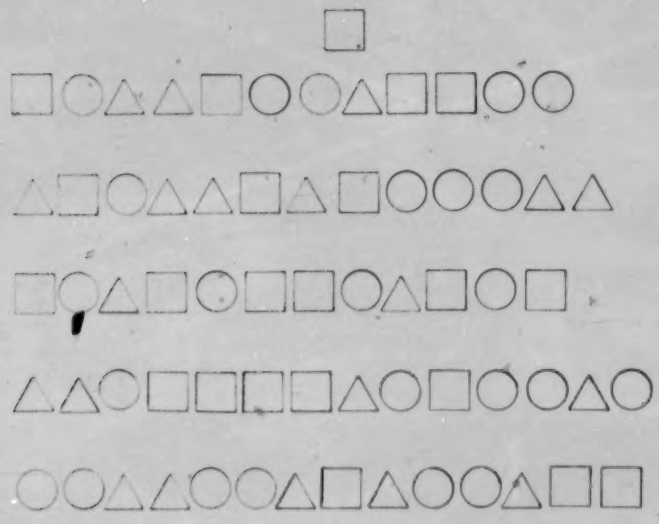
6. The teacher points to "2" in the model, then to line 6 and repeats the directions in 1.

EVALUATION: Record the child's performance in each task.

1. Did the child track from left to right across the row?
2. Did the child identify the letters and numbers correctly? (All? Some? Which ones?)
3. Did the child lose his place?
4. Did the child need to refer to the model to retain memory of the letter or number?
5. Did the child cross the midline smoothly or skip the middle section?
6. Other comments.

FLAT FORM TASK 9

MATERIALS: One sheet with geometric forms spaced evenly as in a paragraph. (See Appendix, page 57.)



DIRECTIONS:

1. The child sits beside the teacher who points to the □ model, then to the whole paragraph and says, "See this □ ? Show me all the squares (boxes) in this paragraph."

   If the child can use a pencil or crayon say, "Mark all the squares (boxes) in this paragraph."

EVALUATION: Record the child's performance.

1. Did the child track from left to right across each row sequentially?
2. Did the child find the beginning of each new line correctly?
3. Did the child move smoothly over the paragraph?
4. Did the child lose his place once, twice, frequently?
5. Did the child finish the task successfully?
6. Other comments.

FLAT FORM TASK 10

MATERIALS: One sheet with letters spaced like words in a paragraph. (See Appendix, page 58.)

Strax Kin adn opral goarst a

ineb inl. Anstra oppek rab sti.

Ext apa dej. Mer uf adbe enlnt

a fra sed qli akal nark improyn

arzprol. Njaf rex qeb ynaze

mayrm rasti qry awanday azem.

Aviw luv clok unta ast quy.

DIRECTIONS: The child sits beside the teacher who points first to "a" model, then to the whole paragraph and says, "See this 'a'? Show me all the 'a's' in this paragraph."

If the child can use a pencil or crayon say, "Mark all the 'a's' in this paragraph."

EVALUATION: Record the child's performance.

1. Did the child track correctly from left to right and from row to row?
2. Did the child identify the letter "a"?
3. Did the child need to refer to the model more than once, or each time, to retain memory of the letter?
4. Did the child lose his place once, twice, frequently?
5. Did the child cross the midline smoothly?
6. Other comments.

FLAT FORM TASK 11

MATERIALS: One sheet with words set as in a paragraph. (See Appendix, (page 59.)

and

Nod but and has and for
ask and and every well all ant
and. Act after are and ant and
tan and dan and nap dam
and pand.

DIRECTIONS: The child sits beside the teacher who points first to the model "and," then to the whole paragraph, and says, "See this word 'and'? Show me all the 'and's' in this paragraph." If the child can use a pencil or crayon say, "Mark all the 'and's' in this paragraph."

EVALUATION: Record the child's performance.

1. Did the child track correctly from left to right and from row to row?

2. Did the child identify the word?

3. Did the child need to refer to the model once, several times, or each time to retain memory of the word?

4. Did the child lose his place?

5. Did the child cross the midline smoothly?

6. Other comments.

SECTION II--RECORD SHEET

NAME _____ TEACHER _____

AGE _____ DATE _____

		CAN DO + CANNOT DO —	Comments related to evaluation questions on assessment pages 19-34
FORM STRIP ACTIVITY	Horizontal		
	Vertical		
	Diagonals		
CHALKBOARD ACTIVITY 1.	Horizontal		
	Vertical		
CHALKBOARD ACTIVITY 2.	Desk		
FLAT FORM TASKS			
1. Match	Letters		
	Numbers		
2. Match vertical sets:	Forms		
3. Match verticals:	Words		
4. Match horizontal sets:	Forms		
5. Match horizontal sets:	Words		
	Numbers		
6. Tracking:	Lines		
7. Tracking:	Forms		
8. Tracking:	Letters		
	Numbers		
9. Tracking in paragraph:	Form		
10. Tracking in paragraph:	Letter		
11. Tracking in paragraph:	Word		

SUGGESTED ACTIVITIES

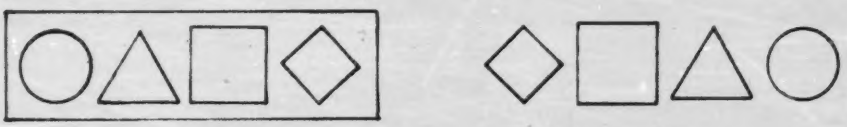
RULES TO APPLY

In order to help teachers get the most from the remediation tasks, the authors present four rules that may be applied. The child's learning style, rate of learning, and other individual needs will determine the best rule or combination of rules required to effect the most progress.

1. Reduce the choices.
2. Enlarge the stimulus.
3. Make the task concrete.
4. Verbalize the activity.

FORM STRIP

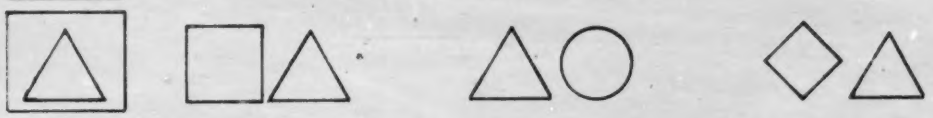
The original assessment task provides the child with a strip containing four geometric forms and four cutouts of the shapes represented.



RULE 1. REDUCE THE CHOICES

Present the child with a strip showing one geometric form and a choice of two shapes:

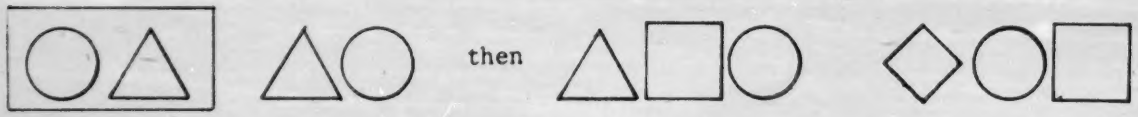
a.

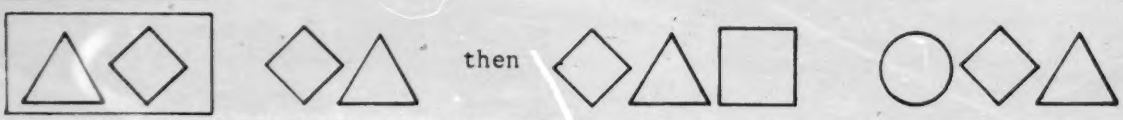
b.


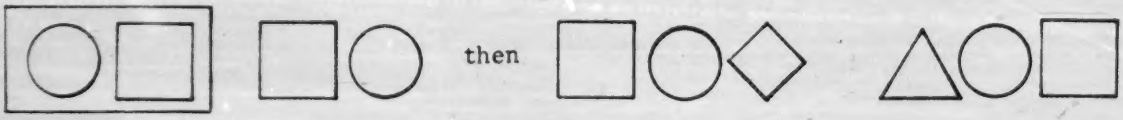
c.

d.

The child is asked to place the correct cutout on the strip. When the child succeeds consistently with the strip of one, the strip of two is presented with two choices, then increased to three choices.

a. 

b. 

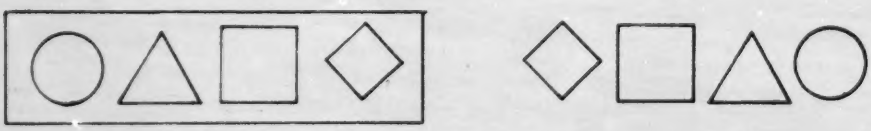
c. 

When the child succeeds consistently with the strip of two, the strip of three is presented with three choices, then increased to four choices.

a.

b.

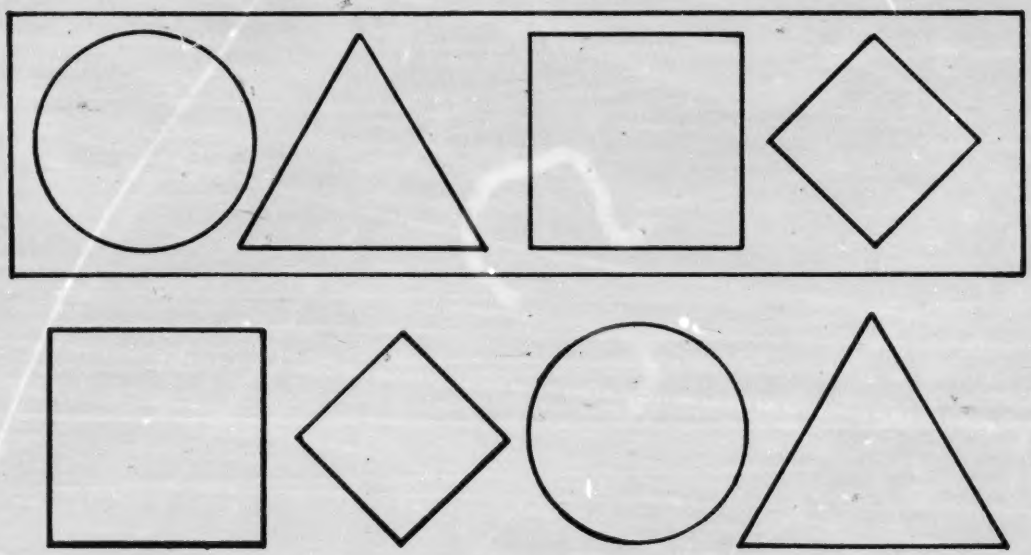
When the child succeeds consistently with the strip of three, the strip of four is presented with all four choices.



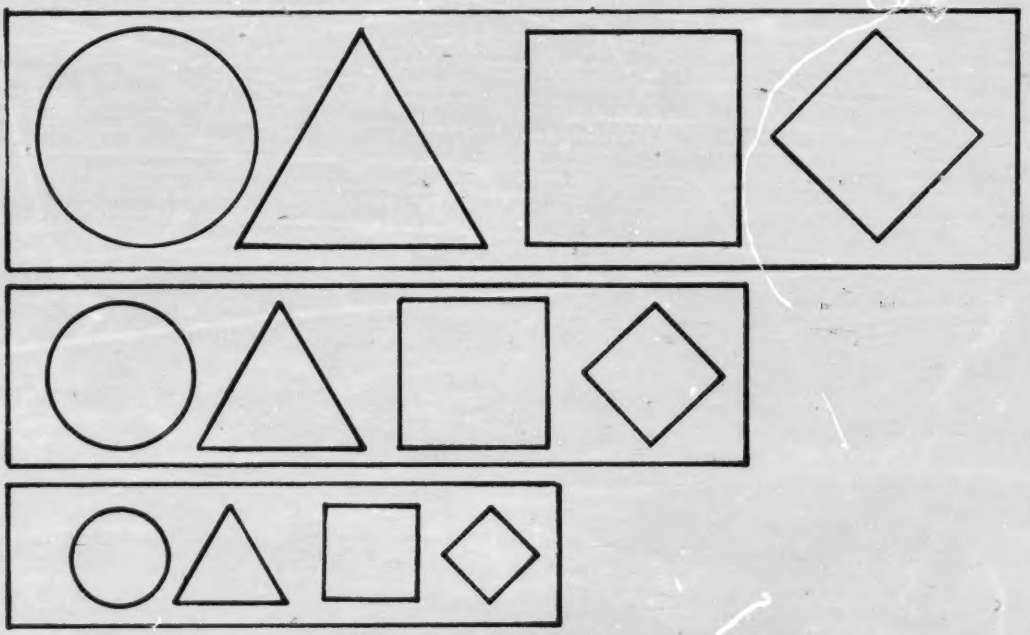
When appropriate, combine with Rule 4, "Verbalize the Activity," (see page 39).

RULE 2. ENLARGE THE STIMULUS

Present the child with a strip double the size of the model used to test. Use a strip containing all four geometric forms and four cutout shapes enlarged in this way.



The child is asked to place the correct cutout on the strip. (Verbalization as outlined in Rule 4 should be followed here as well.) When the child succeeds consistently with double-size forms, reduce the size slowly until the small size is achieved.



Rules 1 and 2 may be combined where needed. Thus a single, double-size form would be introduced and developed to achieve both smaller size and increased number of choices.

RULE 3. MAKE THE TASK CONCRETE

a. Attribute blocks may be used to
   1) identify forms
   2) place in proper place on strips using first one choice, then two choices, etc., as previously outlined.
b. Parquetry pieces may be placed in insert boards.
c. Geometric forms may be pressed into clay to create additional new forms that can be hardened and painted and used in strip activities.

RULE 4. VERBALIZE THE ACTIVITY

The child is asked to name the geometric forms on the strip; to name the geometric cutout shapes; and to state which cutouts belong on the strip. When the task is completed, the child is asked to restate what he has done. Example: "I put the cutout circle (or round piece) on the circle here."

Verbalization should be used whenever possible and appropriate in all the activities that follow.

SUGGESTED ACTIVITIES

FLAT FORM TASK

sit	set	tis	sat	sit
must	much	most	must	mast
next	text	next	nets	nest
every	even	ever	everey	every
girls	grils	girds	girls	sgrit
25	52	35	53	25
794	947	794	497	974

RULE 1. REDUCE THE CHOICES

sit | set sit

The child is given one word with two choices. If appropriate, the child is asked to read the word and verbalize the letters or letter sounds (Rule 4). When the correct choice is made, the child is asked to restate what he has done.

Example: "This word says sit, s-i-t. I picked this word. It also says sit, s-i-t."

When the child succeeds consistently with any one word and two choices, increase to one word with three choices.

sit | set sit tis

When the child succeeds consistently with any word and three choices, increase to one word with four choices. Verbalization continues if needed.

When the child succeeds consistently with any word and four choices, increase to two words with four choices.

a. sit | set tis sat sit
b. must | much most must mast

If this is difficult, leave more space between rows.

a.	sit	set	tis	sat	sit
b.	must	much	most	must	mast

When the child succeeds, introduce another line of words (double spaced) until the required number of lines on a page are achieved; then decrease the space between the rows.

RULE 2. ENLARGE THE STIMULUS

Find a comfortable size print for the child.

Where needed, combine Rule 1 and Rule 2 using one line with extra large symbols. When the child succeeds, decrease the size slowly until the desired size is achieved; then add more rows carefully spaced.

sit	set sit
sit	set sit
sit	set sit

RULE 3. MAKE THE TASK CONCRETE

Use large, medium, and small three-dimensional letters. Magnetic letters and a board suitable for desk work are the most practical. Set up the board with the magnetic letters to look like a ditto sheet.

sit	set	tis	sat	sit

Ask the child to correct each incorrect word by changing or resequencing the letters.

Give the child several cards with one word on each card.

sit must next

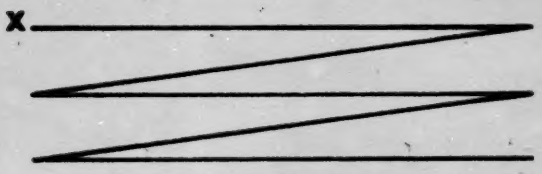
Ask the child to use the magnetic letters to write each word.

RULE 4. VERBALIZE THE ACTIVITY

Verbalization may be used singly or in conjunction with the other rules.

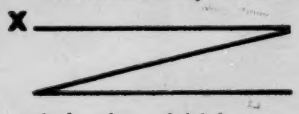
SUGGESTED ACTIVITIES

VISUAL TRACKING TASK

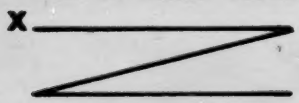


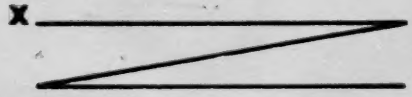
RULE 1. REDUCE THE CHOICES

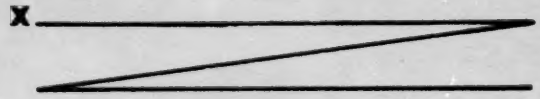
In this case limit the activity. Make the task shorter, both horizontally and vertically.

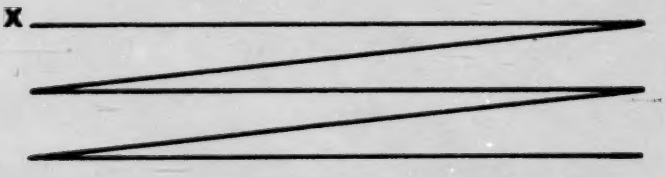


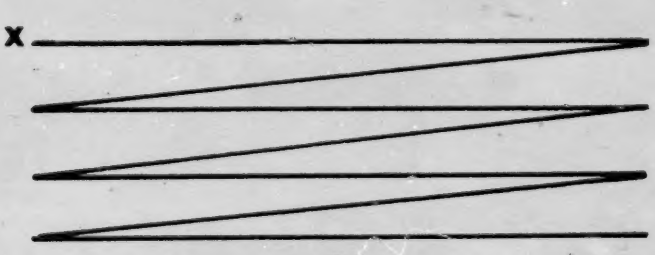
Ask the child to make his finger trace the line. When the child succeeds, increase the line horizontally, then the number of lines vertically.

a. 

b. 

c. 

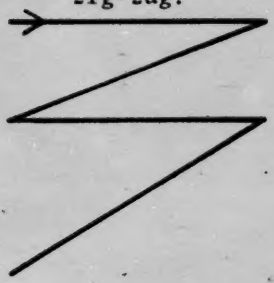
d. 

e. 

RULE 2. ENLARGE THE STIMULUS

Darken the lines, lengthen them horizontally, and vary the zig-zag.

a.



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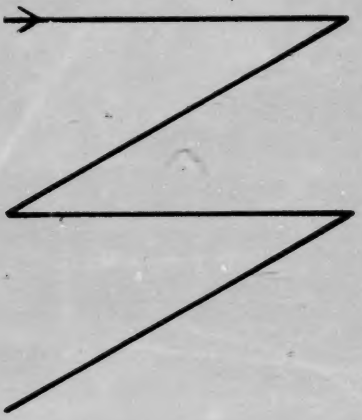
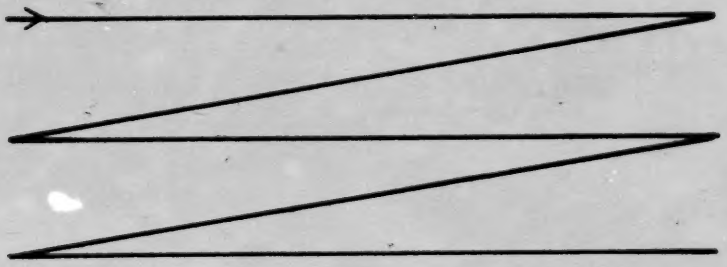
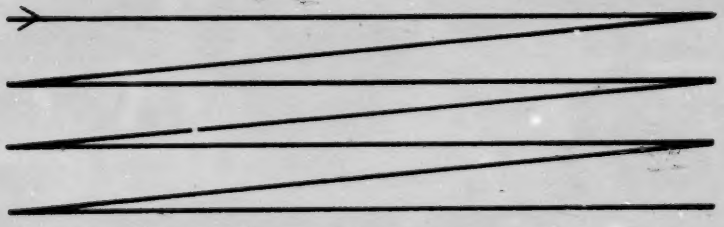


c.

d.



e.



SECTION III

GUIDELINES FOR FORM STRIP AND CUTOUTS

APPENDIX

DEVELOPMENTAL AGE NORMS AND STAGES

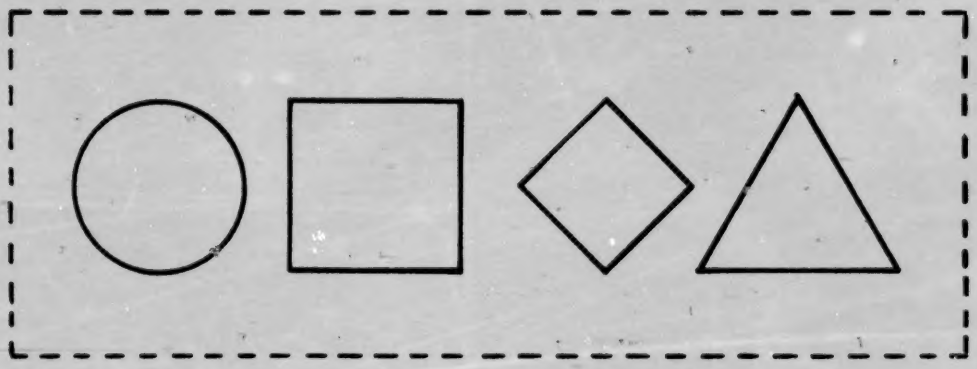
GLOSSARY

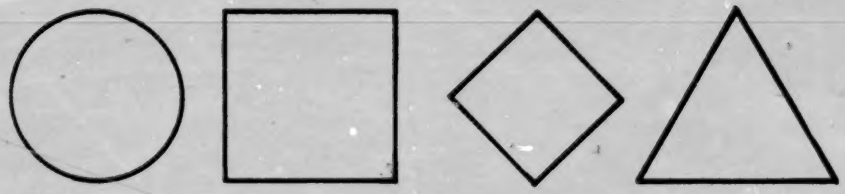
COMMERCIAL MATERIALS

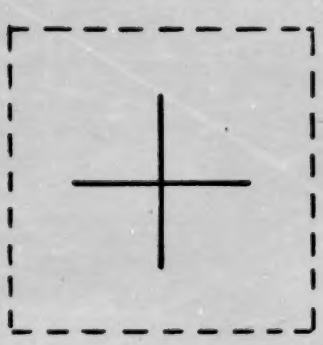
SOURCES FOR ADDITIONAL ACTIVITIES

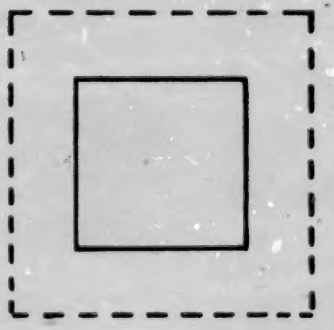
REFERENCES

GUIDELINES FOR FORM STRIP AND CUTOUTS FOR USE WITH
FORM STRIP ACTIVITY AND CHALKBOARD ACTIVITY 2





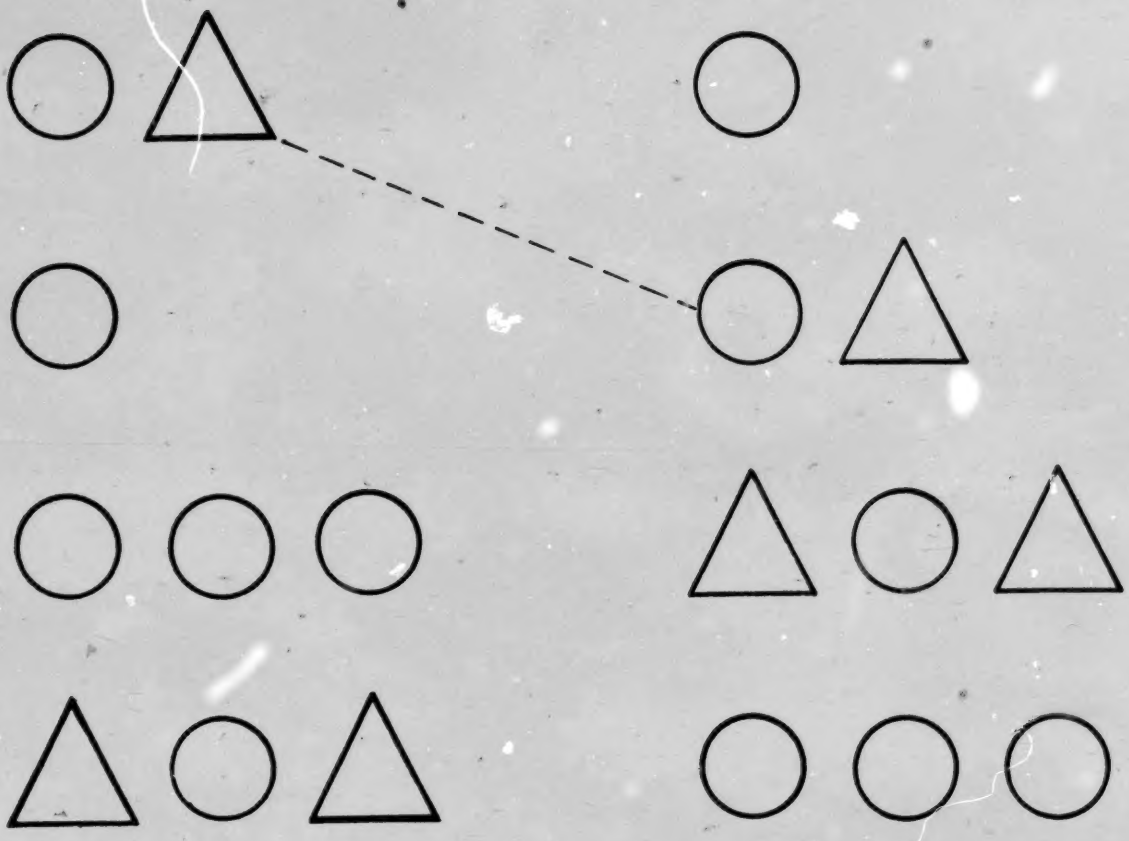




FLAT FORM TASK 1

Model							
1.	c	m	a	f	c		
2.	d	l	s	d	r		
3.	5	l	7	5	2		
4.	2	6	3	4	2	9	
5.	h	a	n	l	r	h	.

FLAT FORM TASK 2



FLAT FORM TASK 3

in	you
you	in
man	like
like	man

FLAT FORM TASK 4

FLAT FORM TASK 5

Model

1.	sit	set	tis	sat	sit
2.	must	much	most	must	mast
3.	next	text	next	nets	nest
4.	every	even	ever	everey	every
5.	girls	grils	girds	girls	sgrit
6.	25	52	35	53	25
7.	794	947	794	497	974

FLAT FORM TASK 6

FLAT FORM TASK 7

1.

2.

3.

FLAT FORM TASK 8

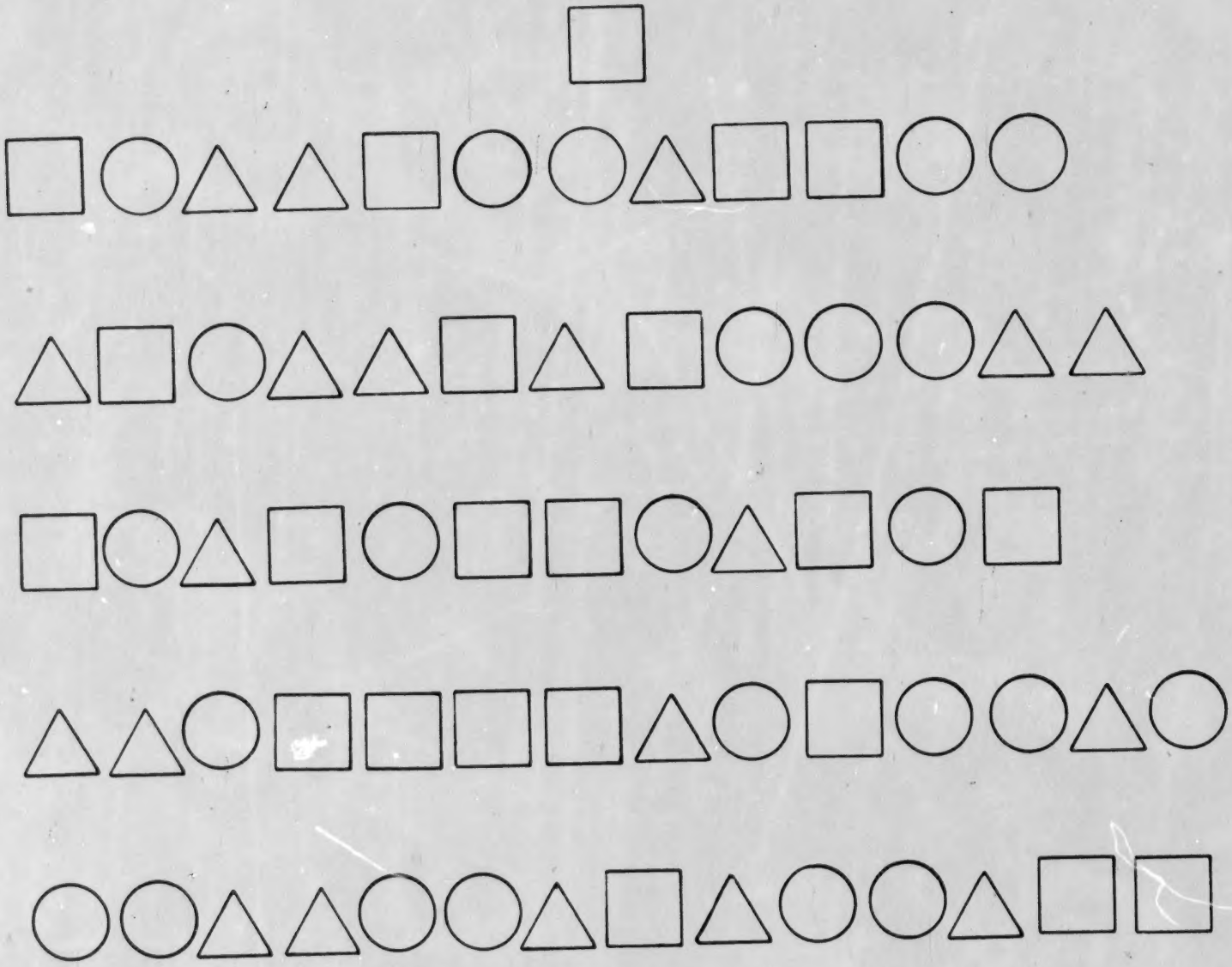
a f v e 4 2

1. g a h c a a b q a d e i a v a k e m a o o
2. n b f t l o a o f r g w f p f f n o t v w f
3. v r p v w u v c a p v y z p v w u m v v v
4. K i n e r p f e c e o r e e u n x e t z o l
5. 7 9 4 3 2 4 1 4 4 0 5 6 4 8 6 3 4 1 4 4 3 2
6. 2 0 3 2 4 6 2 5 7 2 9 1 8 2 1 2 3 4 2 9 6

09

56

FLAT FORM TASK 9



FLAT FORM TASK 10

Strax Kin adn opral goarst a ineb inl. Anstra oppek rab sti. Ext apa dej. Mer uf adbe enlnt a fra sed gli akal nark improyn arzprol. Njaf rex geb ynaze mayrm rasti gry awanday azem. Aviw luv clok unta ast quy.

FLAT FORM TASK 11

and

Nod but and has and for

ask and and every well all ant

and. Act after are and ant and

tan and dan and nap dam

and pand.

DEVELOPMENTAL AGE NORMS AND STAGES: VISUAL PERCEPTION

This material is included in the manual as a reminder of the normal maturational sequence. Please use it for your background information even though it may not apply specifically to your children at the ages indicated.

Visual Following and Object Constancy

Fixates on an object in front of the eyes	1 week
Horizontal following	1-2 months
Vertical following	2 months
Circular following	2 1/2 months
Recognizes familiar objects (bottle)	3 months
Hands brought together in midplane	3-4 months
Follows a flashlight or pencil target	3-7 months
Follows a target with a finger or the hands	3-7 months
Eye-hand exploration	7 months
Fixates where an object disappears	5-6 months
Finds a partly hidden figure	6-7 months
Retains a visual image	6-7 months
Finds a completely covered object under one screen	7-8 months
Finds a completely covered object under three screens	1 year
Finds an object after its visible and invisible sequential displacement	1 1/2-2 years

Form Discrimination

Formboards	
Discriminates blocks (spheres, cubes, etc.)	1/2-1 1/2 years
Inserts a circle, square, and triangle in the board	1-6 years
Inserts the forms easily when the forms are in front of the holes	2 years
Inserts easily when in random order	3 years
Goddard formboard	
96 seconds	3 years
55 seconds	4 years
34 seconds	5 years

Form Matching and Discrimination

Matches unmounted colors--different shapes	3 years
Matches unmounted shapes--different colors	3 years
Matches unmounted similar shapes--different colors	3 years
Matches unmounted similar colors--different shapes	3 years
Matches three forms	3 years
The same sequence as above with mounted figures	5-6 years
The same sequence with outline figures	5-6 years
Sorts and groups forms	5-6 years

Color

Long waves perceived first (red, orange, yellow, green, blue)	2 months
Matches mounted colors (red, green, yellow, blue)	
45% accuracy	2 years
97% accuracy	6 years
Prefers red and blue, likes yellow and green least	3-6 years
Color perceived over form (general agreement)	3-6 years

Figure-Ground

Depth perception	3-5 years
Finds hidden figures in a picture	6-7 years
Recognizes incomplete form (closure)	7-9 years

Spatial Relations

Sense of transposibility of an object	3 years
Detects reversals (up-down before mirror reversals)	5-6 years
Objects not viewed in isolation considered in relation to a point of view. Concepts of above, below, right, left begin to develop.	6-7 years
No organized space according to perceptual laws	4-7 years
Discovery of order in space relations. The child sees himself as part of his environment.	7-9 years
Groupness develops, awareness of the concept of overlapping. (Concept of depth perception, not percept, which develops earlier.)	9-11 years
Beginning of perspective in drawings	11-13 years

Visual Motor

Uses palmar hold of a crayon	1 year
Bangs, makes lateral brushings with the full arm	1 year
Begins to make definite strokes	1-6 years
Naming of scribbling	2-4 years
Makes representational drawings	4 years
Draws then names	4 years
Names then draws	5 years
Snips with scissors	2 years
Cuts	3 years
Imitates vertical and horizontal strokes with a crayon	2 years
Copies horizontal and vertical strokes, draws a misshapen circle	3 years
Imitates a cross, traces a square	3 years
Colors inside of lines	4-6 years
Copies a square	4 years
Joins the ends of a circle	4 years
Copies a cross with the lines broken	4 years
Copies a triangle, traces a diamond	5 years
Copies a diamond	7 years

Builds a tower of six cubes	2 years
Builds a tower of nine cubes	3 years
Builds a tower with almost perfect alignment	5 years
Pulls off the wrapper from candy	2 years
Turns a door knob	2 years
Turns the pages of a book, one by one	2 years
Unbuttons front buttons	3 years
Pours water from a pitcher using both hands	3 years
Laces shoes with some difficulty	4 years
Winds thread on a bobbin	5 years
Laces shoes well	5 years
Pits nested boxes with orientation	5 years

Visual Acuity

20/200	1 year
20/70	3 years
20/30	5 years
20/20	7 years

Body Image

Points to hair, eyes, nose, mouth, parts of the body	1-2 years
Drawing of a person	
Crude form and lines, no differentiation of parts	3 years
The head and eyes differentiated	4 years
Clearly a person: mouth, nose, eyes, body, arms, legs, feet differentiated	5 years

Number

Places two cubes correctly	3 years
Counts, pointing to three objects	4 years
Counts, pointing to ten objects	5 years
Differentiates between one and many	5-6 years

GLOSSARY

Accommodation	The adjustment of the eye for seeing at different distances, accomplished through the muscular action that changes the shape of the lens thus focusing a clear image on the retina.
Binocular	The ability to use the two eyes simultaneously to fuse the two images into a single image that gives a correct interpretation of its solidity and its position in space.
Convergence	The process of directing the visual axis of the two eyes to a near point, with the result that the pupils of the two eyes are closer together. The eyes are turned inward.
Crossing the midline	The movement of the eyes across the central axis of the body, without turning the head.
Fixation	The ability of the eyes to point at a given target accurately (ocular marksmanship) to achieve fusion.
Fusion	The coordination of the images received by the two eyes into a single mental image.
Midline	One's own center of gravity.
Monocular	The use of one eye exclusively, which interferes with the ability to interpret the solidity and position in space of an object.

COMMERCIAL MATERIALS

Some commercial materials listed under visual motor and visual perception provide excellent remediation activities. Additional sources for help may be found under mathematics, science, and language arts. Teachers can adapt materials in creative and innovative ways to meet individual needs.

The following is a list of suggested materials and sources.

Academic Therapy Publications
1539 Fourth Street
San Rafael, California 94901

- Design Sequence Cards
- Thinker Puzzles
- Visual Perception Cards

Ann Arbor Publishers
P.O. Box 1446
Ann Arbor, Michigan 48104

- Michigan Tracking Program
  - "Math Tracking"
  - "Primary Tracking"
  - "Symbol Tracking"
  - "Visual Tracking"
  - "Word Tracking"
- "Perceptual Activities"--Paul McCreary

Consulting Psychologists Press
577 College Avenue
Palo Alto, California 94306

- "A Language Approach to Learning Disabilities"--V. Sperry

Developmental Learning Materials (DLM)
7440 Natchez Avenue
Niles, Illinois 60648

- Alphabet Matching Flipbooks
- Attribute Blocks
- Buzzer Board and Pattern Cards
- Dot-to-Dot Paper
- Eye-Hand Integration Exercises
- Parquetry Insert Boards and Large Parquetry
- Pegboards, Pegs and Pattern Cards
- Templates and Stencils
- Visual Matching Memory and Sequencing Exercises
- Word Hunt Spirit Masters
- Word Matching Flipbooks

A. Daigger and Co.
Educational Teaching Aids Division (ETA)
159 West Kinzie Street
Chicago, Illinois 60610

Set of Circles
Unifix Structural Material

Follett Publishing Co.
1010 West Washington Blvd.
Chicago, Illinois 60607

Frostig Worksheets

Frank E. Richards Publishing Co., Inc.
324 First Street
Liverpool, New York 13088

"Find the Right Letter"--Benjamin Piltch
"Find the Right Word"--Benjamin Piltch

General Learning Corp.
Silver Burdett Division
250 James Street
Morristown, New Jersey 07960

Card Sets
Play Trays

Houghton Mifflin Co.
Educational Division
Pennington-Hopewell Road
Hopewell, New Jersey 08525

"Structural Arithmetic"--Catherine Stern, et al

Ideal School Supply Co.
11000 South Lavergne Avenue
Oak Lawn, Illinois 60453

Dial-a-Face

Instructo Corporation
178 Cedar Hollow Road
Paoli, Pennsylvania 19301

Flannel Board Color Recognition
The Classification Game

Mafex Associates, Inc.
111 Barron Avenue
Johnstown, Pennsylvania 15906

Colomath
Perceptual Motor Aids
The Original Judy Clock
"Words, Puzzles and Mazes"--Matt Glavach

McGraw Hill Book Company
Webster Division
330 West 42nd Street
New York, New York 10036

Attribute Blocks
Mirror Cards

Milton Bradley
74 Park Street
Springfield, Massachusetts 01106

Goal Program
Spin and Find Games
Toys to Develop Perceptual Skills

Parker Bros.
Box 900
Salem, Massachusetts 01970

Probe (Game of Words)
Scan (Split-Second Matching Game)

Teaching Resources Corp.
100 Boylston Street
Boston, Massachusetts 02116

Cheves Program Part 2--Form Puzzles
Colored Cubes and Pattern Cards
Dubnoff Program 1 and 2
Erie Program Part 1--Visual Perceptual Games
Erie Program Part 2--Perceptual Bingo
Erie Program Part 3--Visual-Motor Template Forms
Erie Program Part 4--Perceptual Cards and Dominoes Games
Fairbanks, Robinson Program--Levels 1 and 2
Letter Recognition
Mosaics and Pattern Cards
Parquetry and Pattern Cards
Skillbuilding Blocks
Skillbuilding Marble Board
Spatio-Match
Touch and Match Textures

Vision Conservation Institute
7120 East Parkway
P.O. Box 985+
Sacramento, California 95823

A Teaching Aid on Vision and the Eye

SOURCES FOR ADDITIONAL ACTIVITIES

Corney, David E. Creative Handwork. Academic Therapy Publications, San Rafael, California.

Golick, Marjorie. Deal Me In. Jeffrey Norton Publishers, Inc., New York, 1973.

Kohl, Herbert R. Math and Writing Games in the Open Classroom. A New York Review Book distributed by Vantage Books.

Rosner, Jerome. Two Developmental Training Devices. Academic Therapy Publications, San Rafael, California.

Schubert, D. G. Reading Games That Teach, Books 1-5. Creative Teaching Press, Inc.

Steiner, Violette and Pond, Roberta. Finger Play Fun. Charles E. Merrill Publishing Co., Columbus, Ohio, 1970.

Wagner and Hosier. Reading Games. Teachers Publishing Corp., Darien, Connecticut.

Wedemeyer, Avaril and Cejka, Joyce. Learning Games for Exceptional Children. Love Publishing Co., Denver, Colorado, 1971.

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Barraga, Natalie, Ed.D. Research Series #13. American Foundation for the Blind, New York, 1964.

Chaney, C. and Kephart, N. Motoric Aids to Perceptual Training. Charles E. Merrill Publishing Co., Columbus, Ohio, 1968.

Getman, G. N., Kane, E. R., Halgren, M. R., McKee, Gordon W. Developing Learning Readiness. Webster Division, McGraw Hill Book Company, New York, 1966.

Glanach, M. Words, Puzzles and Mazes. Mafex Associates Inc., Johnstown, Pennsylvania, 1973.

Jedrysek, E., Klapper, Z., Pope, L., Wortis, J. Psychoeducational Evaluation of the Pre-School Child. Grune and Stratton Corp., New York, 1972.

Kephart, N. Slow Learner in the Classroom. Charles E. Merrill Publishing Co., Columbus, Ohio, 1960.

Orem, R. C. Learning To See and Seeing. Mafex Associates, Inc. Johnstown, Pennsylvania, 1971.

National Society For the Prevention of Blindness. Vocabulary of Terms Relating to the Eye. National Society . . . , New York.

Portland Public Schools. Improving Perceptual Skills, A Continuing Education Book. Corvallis, Oregon, 1971.

Sperry, V. B. A Language Approach to Learning Disabilities. Consulting Psychologists Press, Palo Alto, California, 1972.

Van Witsen, B. Perceptual Training Activities Handbook. Teacher's College Press, Columbia University, New York, 1972.

Wedemeyer, A. and Cejka, J. Creative Ideas for Teaching Exceptional Children. Love Publishing Co., Denver, Colorado, 1970.

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